APPRATUS AND METHOD FOR FOCUSING IONS AND CHARGED PARTICLES AT ATMOSPHERIC PRESSURE

Abstract: Improvements have been made for collection and focusing of ions generated from atmospheric pressure sources such as electrospray, atmospheric pressure chemical ionization, inductively coupled plasma, discharge, photoionization and atmospheric pressure matrix assisted laser desorption ionization. A high transmission electro-optical surface is placed between the source regions and the focusing regions to optimize the field geometries and strengths in each respective region. Compression ratios of greater than 5000 are capable of transferring virtually all ions from large volume dispersive ion regions into ion beam cross-sections of less than 1 mm. Embodiments of this invention are methods and devices for improving sensitivity of mass spectrometry when coupled to atmospheric pressure ionization sources.